

# Navy Personnel Research and Development Center

San Diego, California 92152-7250

AP-98-2

June 1998



## Command History Calendar Year 1997

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# **Command History**

## **Calendar Year 1997**

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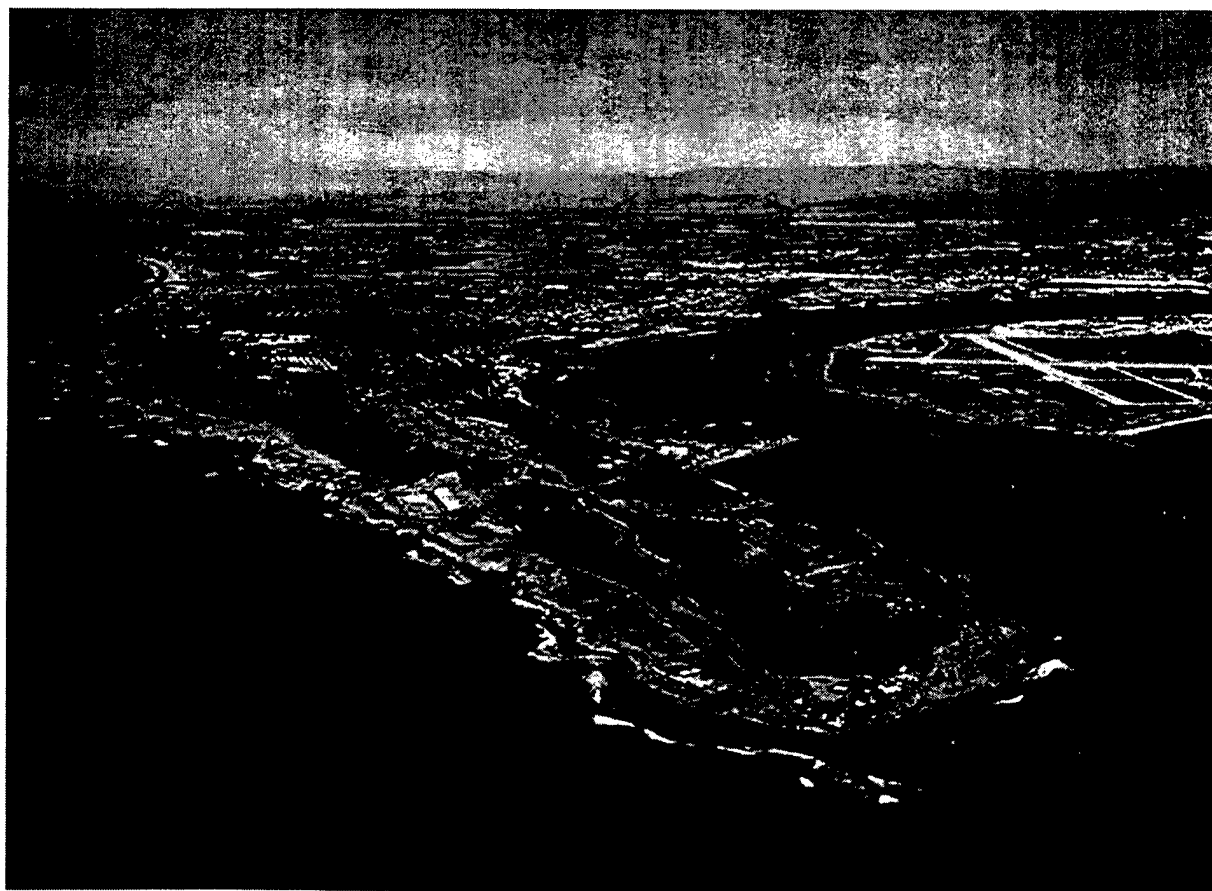
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Aerial view of Point Loma in San Diego, California, home to NAVPERSRANDCEN

## **Introduction**

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The Navy Personnel Research and Development Center (NAVPERSRANDCEN) Command History for CY97 is submitted per OPNAVINST 5750.12. The history provides a permanent record of CY97 activities.

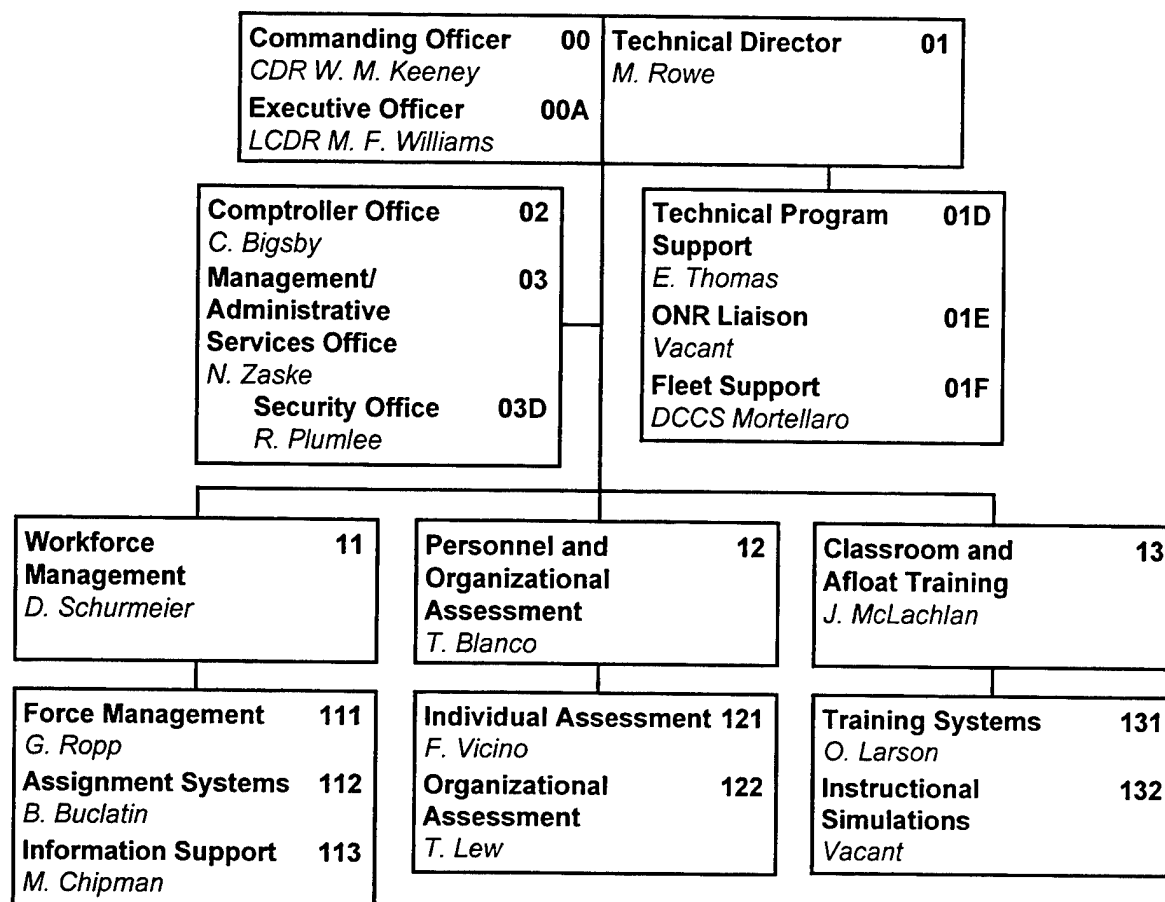
### **Operating Philosophy**

NAVPERSRANDCEN is an applied research center, contributing to the personnel readiness of the Navy and Marine Corps. The Center develops better ways to attract qualified people to the naval services to: select the best, assign them where they are most needed, train each one effectively and efficiently, and manage our personnel resources optimally. By combining a deep understanding of operational requirements with first-rate scientific and technical abilities, the Center is unique in being able to develop new, useful knowledge and refine technology to address people-related issues. This dual expertise permits the Center to develop the technology base for improving the use of human resources within Navy systems and to apply state-of-the-art technology to solve emerging problems. The organizational structure of NAVPERSRANDCEN is represented in Figure 1. As a corporate asset, NAVPERSRANDCEN is responsive to the needs of manpower, personnel, and training managers in the Navy, Marine Corps, and Department of Defense (DOD); to the operating forces; and to the shore establishment that trains and supports the fleet.

The research and development (R&D) methods used by NAVPERSRANDCEN are derived from behavioral, cognitive, economic, and social sciences, as well as from applied mathematics, statistics and computer science. The application of these methods results in tangible products of use to the Navy and Marine Corps. NAVPERSRANDCEN constantly searches for technological opportunities to improve personnel readiness and to reduce manpower costs. We are accountable to the Chief of Naval Personnel (CHNAVPERS), our sponsors, and our users for high productivity, strict ethics, honesty, integrity, professionalism, and perspective. The Center's reporting relationship is depicted in Figure 2.

As part of its operating philosophy, NAVPERSRANDCEN seeks to do as much of its work as possible in operational settings where the final products of our efforts are intended to be used. This helps to ensure that the needs and requirements of the users are met and that the users themselves become familiar with the operational capabilities of the particular products. In some cases, because of the close researcher and user interaction, interim or prototype products have been put into use before the final product has been completed.

Further interactions with operational commands involve a variety of manpower, personnel, and training (MPT) databases that NAVPERSRANDCEN has developed and maintained. Because NAVPERSRANDCEN is an in-house, corporate laboratory, these databases are readily available to support many different operational users and requirements.



\*Human Resources and EEO functions are provided by NASNI

Figure 1. NAVPERSRANDCEN organization.

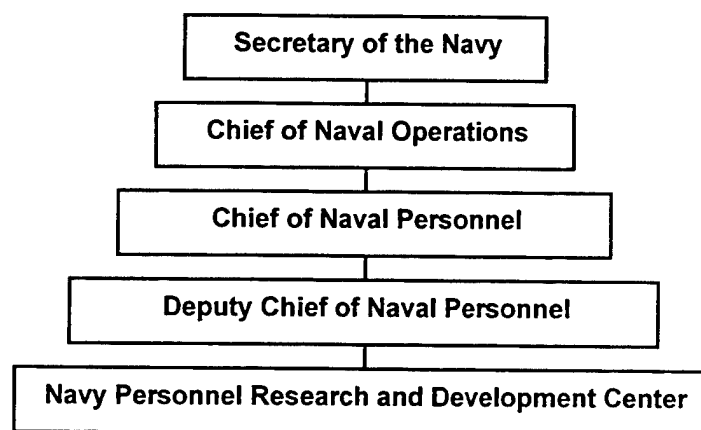


Figure 2. 1997 reporting relationships (Department of the Navy Research, Development, Test, and Evaluation Organization).

## Commanding Officer's Biographies



**Captain Patricia M. Spishock**

On October 6, 1994 Captain Patricia M. Spishock became the 11th commanding officer of Navy Personnel Research and Development Center in San Diego, California. Her distinguished 24 year career ended January 28, 1997 when she died at her home after a valiant battle with ovarian cancer. She was 48.

Captain Patricia Spishock was born on 16 May 1948, in East Brunswick, New Jersey. Captain Spishock was a 1970 graduate of Douglass College of Rutgers University.

She was one of the last graduates of what was then the Naval Women Officers' School in Newport, Rhode Island, which she attended between January and May 1973. The Women Officers' School and the Officer Candidate School, with which it was integrated, was the sole commissioning source for women in the early 1970s. Even with limited opportunities, it was an exciting time for women entering naval service as officers. That period marked the start of a sea change that would eventually lead to opportunities to serve on combatant ships and fly combatant aircraft. In 1973, however, there was no sea duty for women. In fact, Captain Spishock's peers recall the "sea bag" contained only skirts. If a Navy woman went shipboard in those days, she had to do so in civilian clothes, a legacy of the 1960s.

Major changes really started in 1972 when then-Chief of Naval Operations Admiral Elmo Zumwalt issued NAVOP Z-116, one of the famous Z-grams. Z-116 permitted the assignment of women to mainstream jobs alongside their male counterparts in the unrestricted line.

It was in this new climate that Ensign Spishock embarked on her Navy journey.

As a pioneer, Patricia Spishock's performance was destined for close scrutiny from the start. She was among the first women to follow the 110x career path that finally took shape in 1974. Paralleling the career path of the aviation, surface, and subsurface officer communities, the 110x career progression included leadership tours. It was characterized by emphasis on the development of subspecialties, of which she had three: Manpower, Personnel, and Training Analysis; Operations Analysis; and Education and Training Management.

Her first assignment was as training officer, first at Service School Command, Naval Training Center, Bainbridge, Maryland, then at NTC Bainbridge itself, where she was the honor student for her graduating class at instructor basic school. In 1974, she left for Naval Facility Bermuda, where she qualified as an Oceanographic System Watch Officer and became the Administrative Officer. This qualification led to her assignment in 1976 as a Staff Officer and antisubmarine warfare analyst at Naval Ocean Systems Center in San Diego, California. While there, she earned a master's degree in systems management from the University of Southern California in her off-duty hours.

Between September 1979 and December 1983, then-Lieutenant Spishock served as personnel research and research editor at Navy Personnel Research and Development Center, which she would eventually command. She left San Diego for a tour in Washington, DC analyzing enlisted



accession programs, moving west again in 1986 to serve as executive officer, Navy Recruiting District, Seattle.

In 1987, the general unrestricted line 110x established its own assignment branch, and Commander Spishock became the detailee. A longtime volunteer counselor and social worker by education, she was at her best helping other officers plan and execute meaningful careers. She left that post in 1990 to assume command of Naval Technical Training Center, Treasure Island. She moved back to San Diego, California, in 1992 to NTC where she was promoted to the rank of Captain on May 1, 1994.

NPRDC was the third command for Captain Spishock. As the last commanding officer of Recruit Training Center, San Diego, she was entrusted with providing quality training for Navy recruits for the six months of RTC's drawdown preceding its disestablishment in March 1994. Between February 1990 and February 1992, Captain Spishock was the CO of Naval Technical Training Center, Treasure Island, California.

Captain Spishock's career spanned 24 years and was characterized by sustained outstanding performance and exemplary leadership. The 1993 decision to overturn the combat exclusion law, affording women the opportunity to serve on combatant ships and fly combatant aircraft, was based, in part, on the strong performance of dedicated women like Captain Patricia Spishock. Although those opportunities were closed to her, Captain Spishock served her nation with unwavering dedication, paving the way for others to build on her achievements.

On February 5, 1997, Captain Spishock was buried with full military honors at Arlington National Cemetery after a service at the Old Post Chapel on Fort Myer.

Captain Spishock had been awarded the Legion of Merit (two awards), Meritorious Service Medal, the Navy Commendation Medal (three awards), Meritorious Unit Commendation with bronze star, the National Defense Service Medal with bronze star, the Overseas Service Ribbon and the Navy Recruiting Ribbon.

To those she leaves behind, the legacy of Captain Spishock is marked not so much by her extraordinary, trail-blazing accomplishments, but by her skillful, heartfelt caring for, giving to, and guiding of others. The Navy Personnel Research and Development Center dedicated the Navy's manpower, personnel, and training technology library collection on December 1, 1997, to the memory of Captain Patricia M. Spishock, to commemorate her many contributions to research, analysis, and innovation in Naval manpower, personnel and training systems. This dedication also recognized two of her guiding principles: strive for excellence and do your research so that you may make informed decisions.



**Dedication of the NAVPERSRANDCEN  
Spishock Library manpower, personnel, and  
training technology collection  
December 1, 1997**



**Commander William M. Keeney**

A native of San Jose, California, Commander William Michael Keeney graduated from the U.S. Naval Academy and was commissioned an Ensign in June 1977. He received a Masters of Science Administration from Central Michigan University in 1993. He is also a graduate of the Armed Forces Staff College, the Naval Command and Staff College, and is an outstanding graduate of the Air War College.

Commander Keeney completed flight school in March 1979 and reported to Helicopter Antisubmarine Squadron TEN for Fleet Replacement Pilot training in the SH-3H helicopter. In October 1979, he reported to Helicopter Antisubmarine Squadron SIX, and deployed to Western Pacific and Indian Ocean in USS Constellation (CV-64) in 1980, and served aboard USS Enterprise (CVN-65), USS Kitty Hawk (CV-63) and USS Ranger (CV-61).

In August 1982, Commander Keeney reported to the Pre-establishment Unit, Helicopter Antisubmarine Light Forty ONE (HSL-41) to fly LAMPS MKIII helicopters. One of the Navy's first SH-60B Instructor Pilots, he served as the Instructor-Under-Training phase officer and instructed all phases of training. Commander Keeney transferred to Helicopter Antisubmarine Light FORTY THREE (HSL-43) in July 1985 and deployed in USS Thach (FFG-43) as the Detachment Maintenance Officer in May 1986 with the New Jersey (BB-62) Battle Group.

Commander Keeney returned to HSL-41 in December 1986 as the Aviation Safety Officer and flew as a STAN/EVAL Instructor Pilot. In December 1987 he transferred to HSL-43. As Detachment OIC in USS Curtis (FFG-38), he led the first forward deployed LAMPS MKIII detachment to NAF Atsugi, Japan. He also served as Squadron Safety Officer and Operations Officer, and became the second Pacific Fleet pilot to achieve 2,000 SH-60B flight hours.

The Armed Forces Staff College (AFSC), Norfolk, VA was Commander Keeney's next assignment. He graduated in the last 5 1/2 month class at AFSC in June 1990, and then reported to the Joint Strategic Target Planning Staff (JSTPS), Offutt AFB, Nebraska, as aide to the Vice Director. During early 1992, he helped the transition of JSTPS and the establishment of U.S. Strategic Command (USSTRATCOM) and became aide to the Deputy CINC. His last year at USSTRATCOM was as Chief, Policy and Doctrine Branch in the Strategy and Policy Division of the J-5 (Plans and Policy) Directorate, where he worked on arms control, command relations, ballistic missile defense, and joint doctrine issues.

Commander Keeney reported as Executive Officer, NAVPERSRANDCEN in August 1993. In March 1997, Commander Keeney assumed the duty as Commanding Officer of the Navy Personnel Research and Development Center. His personal awards include: The Defense Meritorious Service Medal, Joint Commendation Medal, Navy Achievement Medal, National Defence Medal (with bronze star) and Navy Expeditionary Medal. He also is authorized two Joint Meritorious Unit Awards, three Military Unit Commendations, three Battle E's, and other service ribbons. He is married to the former Susan McAbee of Coronado, California. They have one son, Ryan, born in 1993 and a daughter, Caroline, born in 1997.

## Technical Director's Biography



Mr. Murray W. Rowe

Mr. Murray W. Rowe received his Bachelor of Arts Degree in economics and mathematics from the University of Kentucky in 1973 and a Master of Arts Degree in economics from the University of Maryland in 1975. He was elected to Phi Beta Kappa in 1972.

Mr. Rowe is the Technical Director of the Navy Personnel Research and Development Center. He came to NAVPERSRANDCEN as a research economist in 1976. From 1978 to 1989, Mr. Rowe headed the Center's Force Management Division. In 1989, he became the Director of the Manpower Systems Research Department. In 1988-89, Mr. Rowe served a six month tour as Science Advisor to the Chief of Naval Personnel, ADM J. M. Boorda. In 1991, Mr. Rowe has been awarded the Navy Civilian Meritorious Service Medal and the Department of the Navy Superior Service Award.

Mr. Rowe has extensive research experience in personnel force management modeling and information system development for customers in Bureau of Naval Personnel; the Navy Recruiting Command; Headquarters, U.S. Marine Corps; and the Office of the Secretary of Defense.

Mr. Rowe and his wife, Lee, have two sons.



NAVPERSRANDCEN  
group photograph  
taken on July 23, 1997

## Historical Chronology

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- 1 July 1951      The Naval Personnel Research Unit, San Diego, CA was established under the Bureau of Naval Personnel (BUPERS) to provide a personnel research facility close to the operating forces.
- 1 July 1952      The U.S. Naval Personnel Research Field Activity was established in Washington, DC to provide an activity close to Navy users and systems.
- 26 May 1961      SECNAV Notice 5450 redesignated the two field activities as U.S. Naval Personnel Research Activities.
- 10 December 1968      OPNAV Notice 5450 redesignated the Naval Personnel Research Activity, Washington, DC as the Naval Personnel Research and Development Laboratory due to increased emphasis on R&D.
- 1 August 1969      The Chief of Naval Operations (CNO) redesignated the Naval Personnel Research Activity, San Diego, CA, as the Naval Personnel and Training Research Laboratory.
- 1 May 1973      The Secretary of the Navy approved the establishment of NAVPERSRANDCEN, San Diego, CA to provide a corporate personnel laboratory with an in-depth capability in the behavioral and management sciences. This action consolidated those research functions assigned to the Naval Personnel Research and Development Laboratory, the Naval Personnel and Training Research Laboratory, and the Personnel Research Division of BUPERS.
- 17 May 1975      OPNAV Notice 5450 changed command and support responsibility for NAVPERSRANDCEN from the CHNAVPERS to the Chief of Naval Material (CNM).
- 22 May 1980      NAVMATINST 5450.27B modified the mission statement to include technical and consultant support and services to CNO in the design, development, and operation of the Navy personnel system.
- 1 October 1980      The Commanding Officer, NAVPERSRANDCEN, directed to report for additional duty to Deputy CNO (Manpower, Personnel, and Training) (OP-01).
- 6 May 1985      The disestablishment of CNM changed command and support responsibility for NAVPERSRANDCEN from CNM to Chief of Naval Research (CNR).

- 24 February 1986      The Secretary of the Navy changed command and support responsibility for NAVPERSRANDCEN from CNR to Space and Naval Warfare Systems Command (SPAWARSSYSCOM).
- 27 March 1988        Management control of NAVPERSRANDCEN was transferred from SPAWARSSYSCOM to CNP/Commander, Naval Military Personnel Command (NMPC). NMPC was charged with direct management of NAVPERSRANDCEN.
- 12 September 1991    OPNAV Notice 5450 disestablished NMPC and delegated direct management of NAVPERSRANDCEN to BUPERS.
- 25 September 1991    OPNAV Notice 5450 modified NAVPERSRANDCEN's mission to conduct research and development to improve the performance of individuals, teams, and organizations within the Navy and Marine Corps; to provide products and services specifically directed at improving Department of the Navy personnel planning, testing, acquisition, selection, classification, training, utilization, motivation, organization, management, and other contemporary issues; and to perform other functions as directed by higher authority.
- 3 October 1994        NAVPERSRANDCEN reduced a staff of 228 civilian personnel to 154, by implementing a self-imposed Reduction-in-Force.
- 1 October 1995        Recommendations of 1995 Base Realignment and Closure Commission (BRAC-IV) that NAVPERSRANDCEN be disestablished and its functions realigned became law. Per BRAC-IV recommendations, NAVPERSRANDCEN's manpower and personnel research missions will move to Millington, TN, for realignment under the Bureau of Naval Personnel (BUPERS) in FY98. NAVPERSRANDCEN's training research mission will realign under the Naval Air Warfare Center Training Systems Division (NAWCTSD), Orlando, FL, in FY97.
- 18 September 1996    Established 1 February 1998 as the effective date for Transfer of Function of the training R&D mission to NAWCTSD.

## **Organization**

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### **Mission**

To conduct research and development to improve the performance of individuals, teams, and organizations within the Navy and Marine Corps. To provide products and services specifically directed at improving Department of the Navy personnel planning, testing, acquisition, selection, classification, training, utilization, motivation, organization, management, and other contemporary issues.

### **Philosophy**

We believe people are the most valuable resource of the Navy and Marine Corps. People have the unique capability to take action based on objectives and values in rapidly changing environments. We believe, therefore, that improving the ability of people to perform their assigned tasks is necessary to maximize the effectiveness of weapon systems. Moreover, we believe our efforts will improve the quality of service life and the effectiveness of MPT, and organizational systems and result in a more effective naval force.

### **Vision**

For the Navy and the Marine Corps, the current decade will begin an era of new missions, changing force structure, and shifting priorities. Each Service will prepare itself to be ready at all times to conduct a large number of varied operations in potentially hostile environments. New capabilities and technologies will be developed to meet the challenges of these new responsibilities and threats. Of critical importance will be the continuing need to attract and retain a professional personnel force of the very brightest and most capable young people in the nation.

Through this period and beyond, we see NAVPERSRANDCEN continuing to grow in leadership and influence as the Navy and the Marine Corps' principal center for MPT and organizational systems R&D. We will be recognized for our innovation, initiative, the teamwork of our people, and our ability to anticipate and effectively respond to change.

Our principal value will continue to be in the products and services we provide. As an integral part of the Navy and Marine Corps family, we are motivated and able to seek out and solve the most important Navy and Marine Corps problems within our mission area. We are committed to developing close working relationships with our sponsors and customers and to meeting their needs in a timely, cost-efficient, and scientifically valid manner.

Our major strength will continue to be our staff whose talents cover a broad range of technical disciplines. We are proud of the research scientists who, along with members of the support staff, contribute so much to enhancing the Center's reputation within the operational and scientific communities. We will build on this strength by developing and expanding the skills of

the present staff and hiring new individuals as needed to respond effectively to a wide variety of Navy and Marine Corps problems and opportunities.

As an R&D activity, we will continue to fulfill our responsibility to identify and test the applicability of current and emerging scientific technologies to the solution of Navy and Marine Corps MPT and organization systems problems. We will strive to maintain our recognized expertise in the core technologies associated with manpower modeling; ability, interest, and attitude measurement; instructional design; organizational evaluation; and quality management. At the same time, we will develop new technologies in these areas.

In pursuing this vision, we will strive for continuous improvement in the quality of our internal operations and in the products and services we provide. We will establish meaningful, measurable goals and procedures for assessing progress in attaining them. We will recognize and reward the contributions of our staff. We will remain open to change and flexible in setting future directions and strategies. We are confident that these actions, in total, will assure our continued role in helping to build a stronger and more effective Navy and Marine Corps.

## **Goals**

1. Design and develop MPT and organizational systems products and services that significantly enhance the ability of the Navy and Marine Corps to carry out their missions.
2. Attract, develop, and retain talented and motivated personnel through Center policies and practices that foster and reward proactive behavior, teamwork, communication, trust, risk taking, and innovation.
3. Conduct a technology base program (i.e., basic research, exploratory development, and advanced technology demonstrations) to meet Navy and Marine Corps personnel and operational requirements and to maintain scientific and technical leadership in MPT and organizational systems areas.
4. Maintain in-house scientific expertise and corporate knowledge to ensure technological innovation, "smart buyer" assistance, and real-world understanding of MPT and organizational systems requirements.
5. Anticipate future needs of NAVPERSRANDCEN sponsors and customers and meet them through use of appropriate technology, prioritization of R&D requirements, and by facilitating transitions of products into operational use.
6. Seek continuous improvement in the quality of NAVPERSRANDCEN products and services, and the way they are applied to naval systems.

## **Functions**

1. Plans and develops effective manpower, personnel, and training (MPT) products and services for Navy and Marine Corps operational application. Provides technical assistance to support the transition and implementation of Center products.

2. Develops and maintains in-house Navy and Marine Corps scientific and technical expertise to provide corporate knowledge, corporate memory, technological innovations, "smart buyer" assistance, and real-world understanding necessary for the development and support of Navy and Marine Corps MPT.

3. Plans and conducts an effective technology base program (basic research, exploratory development, and advanced technology development) to meet existing and projected operational requirements and to maintain scientific and technical leadership in MPT areas.

4. Develops new systems and methods for determining manpower requirements, allocating manpower resources, developing personnel inventories, and distributing and assigning those inventories to improve military readiness and control costs.

5. Develops large-scale systems for managing the flow of Navy enlisted personnel (accessions, retention, promotions) to attain desired skill inventories within constraints of cost and feasibility.

6. Develops systems for constructing and executing the Navy's manpower appropriation.

7. Designs systems for optimal job-person matches based on cost, fleet requirements, individual preferences, and a wide variety of assignment policies.

8. Develops systems for managing training resources.

9. Develops information resource management technologies (hypermedia, database management systems, user interfaces) to support manpower and personnel decision making. Develops large-scale systems for managing USMC enlisted and Navy officer personnel strength.

10. Develops systems for managing Navy recruiting efforts.

11. Develops systems for managing Navy substance abuse efforts.

12. Develops new systems and procedures for recruiting, selecting, classifying, and utilizing officer, enlisted, and civilian personnel to improve performance, satisfaction, and retention.

13. Serves as the CHNAVPERS's primary resource to coordinate and conduct personnel surveys in the Navy and to develop new survey methodology for the Navy and Marine Corps.

14. Develops and evaluates personnel testing systems and computerized adaptive testing (CAT) versions of aptitude and classification tests. Serves as Lead Department of Defense research and development (R&D) laboratory for overall management of CAT research, development, implementation, and scientific support of the system.

15. Develops training technologies to enhance personnel readiness.

16. Employs existing and emerging technologies in the development and application of training systems to alleviate Navy and Marine Corps training problems and improve the Navy's operational readiness.

17. Develops and evaluates innovative management and leadership systems for improving the effectiveness and readiness of Navy and Marine Corps personnel and organizations.



18. Develops and evaluates innovative motivation and reward systems for improving the efficiency and effectiveness of Navy and Marine Corps personnel and organizations.

19. Develops and evaluates educational material on innovative management and leadership systems for Navy and Marine Corps personnel and organizations.

20. Develops methods, procedures, and instruments for assessing the effectiveness and efficiency of management and leadership practices in Navy and Marine Corps organizations.

21. Develops, evaluates, and applies innovative personnel assessment technology.

22. Provides independent analyses, technical advice, and consultation to research, development, test, and evaluation (RDT&E) on operational matters related to the Center's mission.

23. Investigates, defines, and addresses operational problems related to fleet personnel performance.

24. Maintains liaison with CNO, ONR, BUPERS, and CNET for the purpose of conducting on-site projects and assisting program sponsors on issues related to MPT management.

25. Develops, installs, and provides life cycle support for information management systems.

26. Provides information and reports to higher authority and the scientific community on the progress and accomplishments of the Center's programs.

27. Provides technical support in the development of the CHNAVPERSP's long range plan with regard to the infusion of appropriate technology, definition, and prioritization of RDT&E requirements and the transition of products into operational use.

28. Provides information and technical support to the Center's BUPERS Program Manager in all matters related to the Center's operation.

29. Develops and maintains liaison with Navy, DoD, and civilian research development, training, and education organizations for the exchange of information and the establishment of cooperative efforts in MPT.



**NAVPERSRANDCEN  
Command Assessment  
Survey Team**

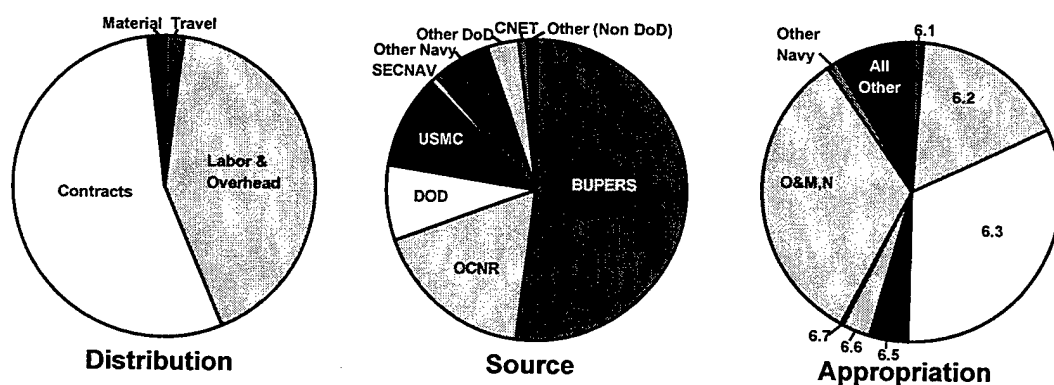
## Center Resources

### Funding

NAVPERSRANDCEN operates under the RDT&E Resources Management System. Under this system, the final fiscal responsibility resides with the Commanding Officer and certain financial responsibilities are delegated to cost center managers. The reporting procedures associated with the Resources Management System provide financial information for both internal management and higher authority.

The principal mission sponsor and prime “customer” for Center RDT&E products is BUPERS. Significant sponsorship also comes from the CNR, the Marine Corps, and other Navy and DOD organizations including the Systems Commands. The majority of RDT&E that the Center conducts is supported by directly funded projects. A small portion of the funds are independent research and independent exploratory development. In addition, a substantial portion of research, development, and analysis consists of “reimbursables,” specific problem solving efforts requested by, and supported with, funding from other organizations.

NAVPERSRANDCEN’s funding for of FY97 was \$22.8 million. Distribution, source, and appropriation of funds are shown in Figure 3.



**Figure 3. Distribution of funds and funding by source and appropriation (\$22.8M, 30 September 1997).**

### Personnel

Because R&D programs at NAVPERSRANDCEN are mission-oriented, it is essential that the research force be multidisciplinary so that early consideration may be given to alternative approaches in research endeavors. The Center’s staff is creatively diverse and equipped to meet this prerequisite.

As of 30 September 1997, the staff numbered 128 civilian personnel. Of the civilians, 89 are professional and technical personnel representing a variety of disciplines. Of the professional and

technical staff, 75% hold advanced degrees. The military staff numbered 15, consisting of line officers and senior enlisted personnel. The military personnel offer extensive fleet and subject-matter expertise that helps ensure the operational relevance of NAVPERSRANDCEN's R&D endeavors. This broad personnel base allows NAVPERSRANDCEN to maintain a highly effective, multidisciplinary team approach to its R&D.

## Facilities

NAVPERSRANDCEN is located on Point Loma in San Diego, CA, with support offices in Washington, DC. and San Antonio, TX. The Center occupies 12 buildings under a host-tenant arrangement with the Naval Command, Control and Ocean Surveillance Center, Research, Development, Test, and Evaluation Division (NCCOSC RDTE DIV). In addition to office space for research and support personnel, the following research facilities are housed at the Center:

- **Research Computing Facility (RCF)** provides general Unix-based computing services and access to the Defense Data Network for Center research and support staff. The facility provides computational and electronic mail support for research in areas of artificial intelligence, computer-assisted instruction, cognitive science, testing, and training. The RCF equipment suite includes file servers and numerous peripherals.
- **Manpower and Personnel Computing Facility (MAPCOM)** provides general purpose IBM-based computing services for Center researchers and administrative operations. The facility is supported by the Manpower Systems Department. It is specially equipped to serve psychologists, economists, mathematicians, and computer scientists whose research requires the organization and analysis of large data files, the development of large-scale mathematical models, the design of information delivery systems, and general-purpose scientific computing. The MAPCOM features an IBM 4381/92E, multiple tape drives, and over 74G in disk storage.



NAVPERSRANDCEN  
Assumption of  
Command Ceremony  
March 10, 1997

## **Research and Development Program**

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The R&D program at NAVPERSRANDCEN addresses three functional areas: Workforce Management, Personnel and Organizational Assessment and Classroom and Afloat training. Within these three functional areas are seven product lines, each of which has one or more projects.

### **Workforce Management**

Develops new systems and methods for determining workforce requirements, allocating workforce resources, developing personnel inventories, and distributing and assigning those inventories to improve military readiness and control costs.

- **Force Management**—Develops large-scale systems for managing the flow of Navy enlisted personnel (accessions, retention, promotions) to attain desired skill inventories within constraints of cost and feasibility. Develops systems for constructing and executing the Navy's manpower appropriation.
- **Assignment Systems**—Designs systems for optimal job-person matches based on cost, fleet requirements, individual preferences, and a wide variety of assignment policies. Develops systems for managing training resources.
- **Information Support**—Develops information resource management technologies (hypermedia, database management systems, user interfaces) to support manpower and personnel decision making. Develops large-scale systems for managing USMC enlisted and Navy officer personnel strength. Develops systems for managing Navy recruiting and substance abuse efforts.

### **Personnel and Organizational Assessment**

Develops systems and procedures for recruiting, selecting, classifying, utilizing and managing the training of officer, enlisted and civilian personnel to improve performance and retention. Psychological and sociological technologies are applied to provide solutions to personnel problems. Serves as the CNO primary personnel survey resource to coordinate and conduct attitude surveys in the Navy and Marine Corps and to develop new survey technologies. Conducts research, development, test, and evaluation on DoN organizations. The principal criteria are effectiveness, quality of products and services provided, efficiency, timeliness, and costs.

- **Individual Assessment**—Develops effective and efficient methods for selecting, classifying, and assigning military personnel. Performs development and evaluation of cognitive and non-cognitive measures of individual differences, and of performance-related criterion measures. Performs research to develop comprehensive person-job matching models. Provides operational direction and technical support for all computer-based aptitude testing.

- **Organizational Assessment and Development**—Conducts organizational assessments to determine appropriate changes needed to meet efficiency and effectiveness goals. Designs, develops, and evaluates interventions and change strategies that evolve from these assessments. Conducts research on methods of management assessment and methods of providing management training. Investigates issues associated with managing a diverse force and develops technologies to enhance performance and improve force readiness. Develops systems to evaluate the effectiveness of quality of life programs and to improve the quality of personnel survey data.

### **Classroom and Afloat Training**

Conducts and RDT&E program to employ existing and emerging technologies in the development and application of training systems to alleviate Navy training problems; increase the effectiveness of this training, while decreasing its costs; and, improve the Navy and Marine Corps operational readiness.

- **Training Systems**—Develops Navy training systems that will best meet the Navy's needs for skilled personnel while enabling officers and enlisted personnel to achieve their personal career goals. Conducts research into the design, delivery, and management of training to ensure maximum readiness of Navy and Marine Corps combat forces. Investigates the technical and operational feasibility of emergent training programs and systems.
- **Instructional Simulations**—Develops advanced instructional technologies for use in training complex conceptual tasks. Conducts research into the design of simulation-based training systems, which incorporate high fidelity models of physical phenomena and sensor systems so as to provide advanced training for expert-level performance.

Other research efforts include developing and testing innovative methods to design, administer, and evaluate management and professional training. In addition, job aids are developed and tested to determine their effects on workload accomplishment.

### **Fleet Liaison Office**

NAVPERSRANDCEN maintains a Fleet Liaison Office (FLO) to maintain liaison with Fleet Commands, Type Commands, Systems Commands, CNO Agencies, and R&D Centers in matters related to NAVPERSRANDCEN's mission areas, and serves as the Center's focal point for investigating and responding to requests for technical assistance. It monitors, on a continuing basis, operational problems, requirements, and priorities to determine RDT&E implications, provides on-site consultative services to operational commands, and performs special projects as needed and facilitates the implementation of the Center's R&D products. The FLO serves as the Center's agent for the Navy Science Assistance Program and is closely linked to this program's management, training, and quality assurance.

## **Award Winning Technical Accomplishments<sup>1</sup>**

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### **Medical Manpower Requirements**

Medical manpower must serve both peacetime and mobilization manpower needs. Determining the medical manpower requirements which best meets both the peacetime workload and mobilization requirements with minimum resources while simultaneously maximizing readiness is a complex personnel problem faced by the Bureau of Medicine and Surgery. The Medical Manpower Requirements Project, led by Mike Shoecraft, developed a prototype model to determine the medical mobilization manpower requirements, determine a more cost effective allocation of resources (active duty, civilian, contract, CHAMPUS) to accomplish peacetime workload, assign the peacetime active duty medical manpower to the medical mobilization manpower requirements and determine the backfill requirement. The Medical Manpower Requirements Model simplifies the medical manpower requirements process (e.g. less man-hours involved, manpower requirements information readily available for program evaluation, adjustments, testing of 'what-ifs'). Users rely on the system to make medical manpower requirement and resource allocation decisions, and determine and justify levels of needed resources. This system is used to update the billet file with the medical mobilization manpower requirements, the mobilization manpower requirement assigned to each peacetime billet, and the SELRES requirements for the backfill mission. This process greatly simplifies and improves utilization of the primary peacetime skills in mobilization billets.

### **Recruit Scheduling Model (RESCU)**

The Enlisted Strength Planners are tasked with determining the number of enlisted accessions needed to reach end strength and the monthly scheduling of various categories of Non-Prior Service (NPS) Gains. They must produce a schedule that meets end strength subject to constraints such as limits on monthly recruitment, cohort attrition over the first six months of service, and fixed inputs for various categories of recruits. RESCU was developed by Ms. Yuh-Ling Su, to automate this difficult and time-consuming task, using a linear programming technique adjusts the optimization for multiple constraints. Although RESCU can be run "off-line" as an independent model, it is more typically run in conjunction with the Strength Planning (SPAN) system calculates some of the critical inputs required by RESCU. RESCU also provides the Enlisted Strength Planners with valuable additional information. A "sustaining" level of total recruits can be imposed on RESCU, and the model will disaggregate the recruits into various categories of NPS Gains, phase them over months, and estimate the resulting attrition from each cohort.

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<sup>1</sup> The Technical Director's award provides individuals and work teams immediate recognition for exemplary technical accomplishment contributing to the Center Mission. As an applied research center, NAVPERSRANDCEN's principal goal is to apply state-of-the-art technology to solve emerging problems affecting Navy and Marine Corps personnel readiness. The attainment of this goal is manifested in tangible products of operational use to Navy and Marine Corps commands. The focus of this special award is on those exemplary technical accomplishments that result in products of significant value to particular user commands.

## **Navy Corrections Retraining Conceptual Model**

Navy Corrections Retraining Conceptual Model and Associated Program Evaluation. The Navy is legally required to provide rehabilitative training for personnel who have committed disciplinary or criminal offenses under its custody in correctional facilities. Dr. John Sheposh's research examined the effects of programs in correctional facilities have on subsequent behaviors and the effectiveness of program components. The model utilized data collected from confinees' Pre-release and Program Summary questionnaires. Additionally, staff ratings of confinees were included in the analyses. Findings based on data collected from all Navy correctional facilities from 1991 through 1996 demonstrate strong evidence that retraining programs and the support and guidance of correction staff members are important factors in success of confinees. Dr. Sheposh's investigative efforts have received extremely positive response from sponsors. The results of this research will provide Navy Brigs program managers the capability to tailor programs to meet the needs of confinees and provided support that Navy Corrections is achieving its rehabilitative training goals.

## **Right Spirit**

Dr. Bernard Ulozas conceptualized, developed, and implemented the alcohol abuse video tape infommercial entitled "Right Spirit". In April 1997, a shortened highlighted version of this video was distributed to all Commanders, Commanding Officers, and Officers in Charge to enhance Fleet readiness by reducing alcohol abuse and related incidents. Dr. Ulozas has continued his efforts, as "Right Spirit" has been implemented Navy-wide, expanded from its original focus only on Navy recruits. This innovative video training program recently provided the inspiration for a new program being developed by the Marine Corps. This effort by Dr. Ulozas strongly illustrates the unique capability of NPRDC to integrate Training into the solution of a multi-dimensional Manpower and Personnel problem.

## **Applied Cognitive Task Analysis (ACTA)**

Applied Cognitive Task Analysis (ACTA) is a CD-ROM software package teaches Navy instructional designers to analyze cognitive skills in the analysis phase of training development. This program, developed by Dr. Josephine Randel, is significant because for the first time it makes available to Navy Instructional Systems Specialists (ISSs) the streamlined interview techniques needed to capture the important cognitive information required to perform many Navy jobs. In the past only well trained researchers using intricate techniques could reliably capture this information.

## **Publications<sup>2</sup>**

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### **Professional Publications Award**

Publications recognized for significant contributions to the scientific and technical literature during 1997:

#### Basic Research:

Ellis, J. A., Semb, G. B., Cole, B. & Wyman, B. G. (In Press, 1998). Very Long Term Memory for Information Learned While Attending School. *Journal of Contemporary Educational Psychology*.

Randel, J. M. & Wyman, B. (In Press, Summer 1998). The Relation of Knowledge of Organization to Performance of a Complex Cognitive Task. *Applied Cognitive Psychology*.

#### Applied Research:

Borack, J. I. (February 1998). An Estimate of the Impact of Drug Testing on the Deterrence of Drug Use. *Military Psychology*.

Folchi, J. S., Blanco, T. A., Wang, W., et al. (In Press, 1998). Exploiting Airline Reservation Technologies to Improve Navy Training Management. *International Transactions in Operations Research*, Volume 4, Number 2.

### **Technical Reports**

Borack, J. I. (1997) *A Technique for Estimating the Impact of Improvements in Drug Testing Sensitivity on Detection and Deterrence of Illicit Drug Use by Navy Personnel (NPRDC-TR-97-2)*. San Diego: Navy Personnel Research and Development Center. (AD-A326 352)

Ellis, J. A., Tarker, B., Devlin, S. E., Wetzel-Smith, S. K. (1997) *The Interactive Multisensor Analysis Training (IMAT) System: An Evaluation of Acoustic Analysis Training in the Aviation Antisubmarine Warfare Operator (AW) Class "A" School (NPRDC-TR-97-3)*. San Diego: Navy Personnel Research and Development Center. (AD-A328 827)

Nakada, M. K. (1996). *Nuclear Officer Retention: MSR and Beyond (NPRDC-TR-97-1)*. San Diego: Navy Personnel Research and Development Center. (AD-A317 225)

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<sup>2</sup> Unclassified, public release only.



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- Baker, H. G., Ford, M. (1997) *Navy-wide Personnel Survey (NPS) 1995: Opinions, Issues, and Satisfaction (NPRDC-TN-97-4)*. San Diego: Navy Personnel Research and Development Center. (AD-A322 477)
- Baker, H. G., Ford, M. (1997) *The Navy Core Values Survey: Further Progress Toward a Navy Values Community (NPRDC-TN-97-8)*. San Diego: Navy Personnel Research and Development Center. (AD-A326 152)
- Chung, J. C., Ryan-Jones, D. L., Robinson, E. R. N. (1996) *Graphical Systems for Explosive Ordnance Disposal Training (NPRDC-TN-97-2)*. San Diego: Navy Personnel Research and Development Center. (AD-A316-949)
- Craiger, J. P., Weiss, R. J., Butler, A. B., Goodman, D., Wilcove, G. L. (1997) *Navy Quality of Life Survey: Structural Equation Modeling (NPRDC-TN-97-12)*. San Diego: Navy Personnel Research and Development Center. (AD-A329 867)
- Duffy, T. M., Robinson, C. A. (1996) *Designing Tools to Aid Technical Editors: A Needs Analysis (NPRDC-TN-97-1)*. San Diego: Navy Personnel Research and Development Center. (AD-A315 858)
- Helms, II, R. F., Nissman, D. B., Kennedy, J. F. (1997) *Virtual Environment Technology for MOUT Training (NPRDC-TN-97-10)*. San Diego: Navy Personnel Research and Development Center. (AD-A328 001)
- Kantor, J., Ford, M., Olmstead, M. (1997) *Navy-wide Personnel Survey (NPS) 1996: Statistical Tables for Officers (NPRDC-TN-97-5)*. San Diego: Navy Personnel Research and Development Center. (AD-A331-540)
- Kantor, J., Ford, M., Olmstead, M. (1997) *Navy-wide Personnel Survey (NPS) 1996: Statistical Tables for Enlisted Personnel (NPRDC-TN-97-6)*. San Diego: Navy Personnel Research and Development Center. (AD-A331-539)
- Ropp, G. A. (1997) *COURTNEY User's Guide (NPRDC-TN-97-9)*. San Diego: Navy Personnel Research and Development Center. (AD-A326 996)
- Rosen, H. H., Sheposh, J. P., Shettel-Dutcher, J., Barnes, A. S., Ralston, J. M., Tally, S. (1997) *Violence Prevention and Control Programs in the Navy: A Review of Programs, Program Effectiveness, and Factors Affecting Program Success (NPRDC-TN-97-7)*. San Diego: Navy Personnel Research and Development Center. (AD-A324 586)
- Ryan-Jones, D. L., Hamel, C. J. (1997) *Guidelines for Use of Three-Dimensional (3-D) Graphics to Enhance Training of Explosive Ordnance Disposal (EOD) Render-Safe Procedures (NPRDC-TN-97-11)*. San Diego: Navy Personnel Research and Development Center. (AD-A329 015)

Thomas, P. J. (1996) *Analysis of Unplanned Losses From Deploying Ships (NPRDC-TN-97-3)*. San Diego: Navy Personnel Research and Development Center. (AD-A319 602)

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*Command History--Calendar Year 1996 (NPRDC-AP-97-2)*. San Diego: Navy Personnel Research and Development Center. (AD-A326 100)

### **Journal Articles and Book Chapters**

Borack, J. I. (1997). A technique for estimating the probability of detecting a nongaming drug user. *The American Statistician*, 51(2) 134-136.

Ellis, J. A., Whitehill, B. V., & Irick, C. The effects of explanations and pictures on learning, retention, and transfer of a procedural assembly task. (1996). *Contemporary Educational Psychology*, 21, 129-148.

Larson, G. E. (1996). Mental rotation of static and dynamic figures. *Perception and Psychophysics*, 58, 153-159.

MacMillan, J., Getty, D. J., & Tatum, B. C. (1997) Visual metaphors and mental models in display design: A method for comparing intangibles. *Proceedings of the Human Factors and Ergonomics Society 41<sup>st</sup> Annual Meeting* (p. 284).

Yanwen, W., Folchi, J., Blanco, T. A., Lath, S., & Burns, L. (1997). Exploiting airline reservation technologies to improve Navy training management. *Journal of International Transactions in Operational Research*.

## **Distribution List**

Chief of Naval Personnel (PERS-00), (PERS-00B)

Special Assistant for Research Management (PERS-00H)

Chief of Naval Operations (Historian)

Defense Technical Information Center (DTIC) (4)